

The Root of the Problem

Tips for managing around drought.

Story & photos by **Becky Mills**

Why are my pastures brown but my hay fields are green?

University of Georgia Extension forage specialist Dennis Hancock can just about answer this drought-related question in his sleep, he's heard it so many times: "The pastures are overgrazed."

It is basic biology. The roots store the sugars that keep the plant going. When the plant is defoliated, as in grazed, the roots die back. "If you continue to overgraze," he says, "the roots die back even more. Then the roots and the plant eventually die."

Hancock feels your pain. He knows you're out of grass and hay, and your cows' body condition is slipping. But if there is any

way, now is the time to divide your pastures up a bit so you can give at least part of them a break.

Take a look at these grazing efficiency numbers:

- ▶ If you let your cattle graze continuously, you're only getting 30%-40% of the good out of that pasture.
- ▶ Go to a slow rotation and you increase the efficiency to 50%-60%.
- ▶ Up that to a moderate rotation and you'll increase the efficiency to 60%-70%.
- ▶ If you really get busy with the temporary electric fence and strip-graze, you can increase the grazing efficiency of your pastures to 70%-80%.

Even if your pastures are primarily Bahia grass or Bermuda grass, known for their resilience, Hancock says they still need a break. He recommends not grazing Bahia grass below 1½ inches (in.) and Bermuda grass below 2 in.

"Drought recovery depends on how hard we graze to begin with," he says.

Now is not the time to forget fertilizer and lime, either. Hancock says his No. 1 commandment is, "Thou shall soil test." For pastures, once every three years is probably enough. But with hay fields, since you're taking nutrients off with every cutting and not putting them back in with cattle manure, you'd better soil test those every year.

Part of it goes back to the roots. "Soil pH is the biggest impediment to the roots



▶ University of Georgia Extension forage specialist Dennis Hancock says producers should avoid overgrazing during a drought because of the damage it does to the plant's root system.

going down, besides grazing. Potash also determines the competitiveness of some species. We can't shortcut potassium (K) because of weed competition," Hancock says.

He warns, "Drought itself won't kill a plant. Combine it with pest damage, overgrazing and weeds, and it will kill it."

The good news is you can cut back on nitrogen (N) during or immediately after a drought. After all, the plant isn't growing, or hasn't been growing enough to use it like it does when conditions are good.

"During drought, adapt the standard recommendations to nonstandard conditions." He recommends dropping the standard nitrogen recommendations down to 50% to 75% on Bermuda grass for hay production. "That moderates the risk of excess nitrate levels," he adds.

"It is also time to remember our old friends — legumes," he continues. "We're probably leaving 100 units of nitrogen on the table by not using winter annual legumes. The best tillage implement you have is a plant root, especially a legume root. And legumes are the ultimate time-release fertilizer."

Above all, even though it is difficult to keep your pastures first priority in a drought, Hancock begs producers not to open every gate and sacrifice every pasture to overgrazing. "Droughts usually end, cattle come and go, but you're stuck with your pastures."

For more information on drought and forage management, visit www.georgiaforages.com.



▶ Early weaning calves can help conserve forage.

Money Matters

Story & photos by **Becky Mills**

It isn't your imagination. Everything really does cost more. "Fertilizer prices, nitrogen (N) prices, have almost doubled since '02," says Curtis Lacy, University of Georgia Extension livestock economist. "Fuel prices, diesel prices, are up 150% since '02. Those two things, fertilizer and fuel, have raised the cost of production on a 500-pound (lb.) calf 16¢ to 18¢ per pound."

So, what does that have to do with a drought? Unfortunately, a lot. Money is already tight, and that makes the financial decisions during a drought even more critical. For example, do you buy hay or cut back on buying feed, or cull cows or sell calves?

Lacy says to prioritize. First, he states facts. "There is not much you can do about the prices of inputs. Two-thirds of out-of-pocket expenses for a cow-calf operation are feed, whether it is pasture or supplemental feed. Feed less."

That doesn't mean to try to starve a profit out of your cows but rather to wean calves earlier than you probably do already. "You

can significantly reduce what you have to feed," Lacy says. "It takes around \$1.40, plus or minus, per day in feed costs to maintain a cow. It takes around \$1, or a little more, per day to put gain on a calf."

He recommends weaning the calves as early as 60 to 90 days. But, instead of selling the calves, keep them and precondition and/or stocker them and cull cows.

But don't cull at random. First, cull the old open cows. Next, cull the young open cows. Then, start fine-tuning and cull the cows that don't raise a calf that is large enough or of desired quality to pay the cow's annual upkeep. As a last resort, cull the 3- to 7-year-old cows.

"That's pulling the plug," Lacy says. "They are your most productive cows."

When you do cull and sell cows, Lacy says to remember the basics of cow marketing. "Prices for cull cows are based on live weight and the percent of lean meat yield." He says the base for prices is a cow in a body condition score (BCS) of 4 to 6, with 1 being emaciated and 9 being extremely obese.



► When forage supplies are short during drought, University of Georgia Extension livestock economist Curtis Lacy says to cull and sell unprofitable cows to help conserve hay and grazing.

He cautions, "Move your cows before you run out of feed. Cows in good flesh, without obvious defects, sell better."

Lacy adds, "Prices for cull cows in the spring and summer are higher than they are in the fall. Sell before Labor Day.

"You're better off doing a good job with fewer cattle than a halfway job with a lot of cows," he emphasizes. "Cull all likely nonproductive cows. If it ain't growing, it needs to be going."



► Lacy recommends selling cows before you run out of feed.



Got Hay?

Story & photos by **Becky Mills**

Darrell Rankins, Auburn University animal scientist, says the first step to maximizing your hay resources is to get out the polywire and tread in poles to use what little forage you do have to the max. “Implement simple rotational grazing. There are always periods of excess growth.”

He emphasizes, “Do a better job of managing what you have. With drought, we go from “semi-optional” to “have to” with pasture management. If all you do is break the pasture in half and rotate back and forth, I’ll guarantee it will help you do a better job with your forages, and you’ll wonder why you didn’t do it 20 years ago.”

Next, ration the hay you do have on hand. Rankins says a cow, or any ruminant, needs a bare minimum of 0.5% of her body weight to keep her rumen going. That’s 6 pounds (lb.) of roughage per day for a 1,200-lb. cow. “When times get desperate limit hay.” Granted, that’s easier said than done, but he

suggests using a mixer/grinder to put the hay out, if you already have one. If not, unroll the hay, then use a strip of polywire to keep the cows from wasting it. Or, you can put the rolls of hay in rings in a small pen or pasture and let the cows eat for two hours per day, then drive them out. If you have small square bales, Rankins says they are often the best option for limiting hay. You can put them out far enough apart so the timid cows can eat, too. Plus, he says, “People usually put up their better-quality hay in small square bales.”

If you are limit-feeding hay, though, he warns, “Cows won’t look as full as they do on a full feed of hay.”

Obviously, if you’re in a drought, your pastures are short and you’re limit-feeding roughage, your cows have to have something else to eat. He says a 1,200-lb. dry cow needs 14 lb. of a 12% protein grain mix until she calves, and then she needs to go up



► Auburn University animal scientist Darrell Rankins says cotton gin trash can be used as a hay substitute.

to 18-20 lb. Rankins says that can be a mix of 575 lb. of corn and 50 lb. of soybean meal or cottonseed meal.

“It takes a 10-foot (ft.)-long trough for 10 to 12 cows. Spread the troughs out. Pay attention to detail, and watch for founder.” He adds, “It is quite labor-intensive. The best way to feed a grain mix is twice a day.”

Substituting another roughage source for hay can also work. If you’re in or near peanut growing country, peanut hulls are an option. Rankins says, however, to make sure the peanut hulls are loose, not ground or pelleted. “Those are terrible for cows as far as nutrition is concerned. They also take a long time to get through the digestive tract.”

If you are near a cotton gin, he says gin trash can be a good choice. “It is palatable. I’ve seen cows leave good-quality hay to eat gin trash. It also has a good rate of passage.”

He says the cotton byproduct is 50% total digestible nutrients (TDN) and 7% to 9% protein.

Commodity feeds are another option when drought has you scrambling for feed and/or roughage. Rankins says soyhulls, corn gluten feed and wheat midds can all be good supplements for cows.

Commodity feeds require a commodity barn, though. However, he says it doesn’t need to be elaborate or expensive. “It needs a 14-ft. eave height so a semi truck with a live bottom can back up to it. Then you’re set.”

The timing on buying commodity feeds is critical, too. “There are no bargains in February,” Rankins says. “Buy cow feed in the summer. Historically, the third week in May you’ll start to see moderation in feed prices.”

► Chopping and putting out haylage in windrows cuts down on waste.



Adding insult to injury –

Beware of Nitrate Poisoning

Story & photos by **Becky Mills**

It's ironic. Your pastures finally get the rain you've been hoping for and you have to worry about nitrate poisoning.

Actually, nitrates are a good thing — all plants contain them. Normally, the rumen bacteria break them down into nitrites, then into ammonia, then to protein. The problem is when the cow's system gets overloaded with nitrites and she can't break them down. The nitrites get in her blood and take the place of oxygen, and she dies from suffocation.

The overload starts when plants take up nitrogen (N) from the soil but photosynthesis stops, like when it is dry or cloudy for a long time. Herbicides like 2,4-D can also bring photosynthesis to a halt. The nitrogen just sits there. If you finally get a rain and a little spurt of growth, naturally you're going to turn in your cows to get the precious grass, or run the hay mower. But if the plant hasn't had time to use up the nitrogen, especially if you've fertilized heavily before the dry spell, the plant is jam-packed with nitrates, and your cows get more than they can handle.

The worst part is it can be your best cows if they're stressed. "It is the cows that are under stress — the ones that are pregnant or lactating, or sick or younger or older," says Doug Mayo, Jackson County, Fla., Extension agent.

If you're lucky, you'll see moderate symptoms. Those can include reduced appetite, weight loss, diarrhea and watery eyes.

The acute symptoms are chocolate-colored blood, blue mucous membranes, labored breathing, muscle tremors, abortion and death.

Fortunately, there are ways to hold down the chances your cows will get nitrate poisoning. First, think about the forages your cows are grazing or you're harvesting for them. In the warm-season category, corn, sorghum, Sudan and pearl millet have a tendency to collect nitrates. The cool-season forages that tend to accumulate nitrates are wheat, oats, rye, rape and turnips. Watch out for weeds, too. Pigweed, ragweed, lamb's-quarter, thistle, nightshade, goldenrod,



► Jackson County, Fla., Extension agent Doug Mayo warns that nitrate poisoning is a concern during drought.

Johnsongrass and dock accumulate nitrates. "When they're in their hay, cows can't avoid them," Mayo says.

If you have any of these forages or weeds and you're worried about the nitrate level, contact your county agent. He or she can possibly test them in the field, in their office or tell you where to send a sample to get it tested for nitrate levels.

If you're waiting for test results, don't turn your hungry cows out on forages that may have high nitrate levels. Use test animals or limit-graze them for a couple of hours, preferably after filling them up with hay first.

If you're trying to salvage your drought-stunted corn crop, Mayo says, "Raise the cutter bar. The highest levels of nitrates are in the lower third of stalks."

If you're cutting the forage for hay, Mayo recommends waiting five or more days after a rain to harvest so the plants will have time to use the nitrogen for growth rather than accumulating it. The bad news is haying won't reduce the nitrate level. Ensiling it will, though, by 30% to 50%.

If you're harvesting forage for green chop, feed it immediately before it goes through a heat.

If once you get the sample back, you find your forage tested high in nitrates, it still can possibly be used. "Gradually introduce the forage," Mayo says. "Cattle can adapt."

He also cautions to leave off the monensin. That seems to make cattle more susceptible to nitrate poisoning.

Most of all, he says, "Dilute the high-nitrate forage with grain. The solution to pollution is dilution."



► Dilute high-nitrate forage with grain, Mayo recommends.

Nitrate level in forage, ppm	Feeding precautions	
	Unadapted animals	adapted animals
568	safe	safe
568-1,136	slight risk	safe
1,136-2,272	moderate risk	slight risk
2,272-3,409	high risk	moderate risk
3,409-4,544	severe risk	high risk
4,544-5,679	extreme risk	severe risk
5,679+	extreme risk	extreme risk

Source: Matt Poore, North Carolina Cooperative Extension Service.

